

This letter discusses the applicability of the Use Tax to uses of refinery gas. See 35 ILCS 105/3-10. (This is a GIL.)

October 11, 2001

Dear Xxxxx:

This letter is in response to your letter dated May 13, 2001 and the follow-up materials received on July 27, 2001. The nature of your letter and the information you have provided require that we respond with a General Information Letter, which is designed to provide general information, is not a statement of Department policy and is not binding on the Department. See 2 Ill. Adm. Code 1200.120 subsections (b) and (c), which can be found at <http://www.revenue.state.il.us/legalinformation/regs/part1200>.

In your letter, you have stated and made inquiry as follows:

On behalf of our client, we respectfully request the Illinois Department of Revenue to issue a private letter ruling pursuant to 2 Ill. Admin. Code §1200.110, with respect to the following factual situation.

General Information

- 1) Enclosed please find an original Form IL-2848, Power of Attorney, authorizing FIRM to represent Company before the Illinois Department of Revenue.
- 2) This Private Letter Ruling ('PLR') is not requested with regard to hypothetical or alternative proposed transactions. The PLR is requested to determine the Illinois use tax consequences of the actual business practices of Company.
- 3) Company is not currently engaged in litigation with the Department in regard to this or any other tax matter.
- 4) Company is currently under audit by the Department. However, the audit is not in connection with the matter presented in this request. Company has communicated to the auditor that it intends to request a private letter ruling from the Department with respect to this matter.
- 5) The Department has not previously ruled regarding this matter for the Company. Neither Company nor FIRM has submitted the same or similar issue to the Department.
- 6) Company requests that certain information be deleted from the PLR prior to dissemination to others. Company requests that its name, address, location of its facility, the description of the facility and the name of its representative be deleted.

- 7) Company knows of no authority contrary to the authorities referred to and cited below.

Statement of Material Facts

- 1) Company is a retail purchaser and refiner of crude oil which, when refined at the Company's Refinery (hereinafter referred to as 'Refinery'), produces a waste or by-product commonly referred to as refinery gas, refinery fuel gas, or process gas (hereinafter referred to as 'refinery gas'). Company self-assesses Illinois use tax on the use of refinery gas produced and consumed by Refinery.
- 2) Refinery gas is an unwanted by-product of the refining process that is generated by unwanted chemical reactions in the process of producing salable petroleum products (e.g., gasoline, diesel fuel, jet fuel, kerosene, petrochemical products, etc.). The refining process uses catalysts to change the molecular structure of the oil molecules; some gases are necessarily formed as waste by-products.
- 3) Natural gas differs from refinery gas in that natural gas is derived from naturally occurring underground gas formations. It is transported on pipeline systems and generally consists of approximately 95% methane. Refinery gas is a waste by-product of refining operations, which are essentially chemical transformation operations. Its chemical make-up generally consists of 40% methane. Due to the chemical processes which go on at Refinery, the composition and quality of refinery gas is not consistent. It is therefore not a reliable fuel for residential or commercial use. In order to meet the specifications required for residential use, refinery gas must be further processed before it can be mixed with natural gas. Natural gas is a marketable commodity. Refinery gas is not a marketable commodity due to its intrinsic qualities.
- 4) Transportation of refinery gas outside the refinery requires a dedicated pipeline, since refinery gas cannot be transported through natural gas pipelines or by truck. Refinery gas would contaminate natural gas if it were added into the natural gas distribution network due to the higher methane content of natural gas. Refinery gas also has a much higher sulfur level and water content than natural gas; the result is it would corrode the pipeline. Furthermore, the Illinois Commerce Commission has adopted regulations concerning natural gas that would preclude the transport of refinery gas through a natural gas pipeline. Transportation by truck is not economically feasible, since it requires a pressure vehicle built according to the standards of the American Society of Mechanical Engineers, which would hold only a very small quantity of gas.
- 5) Refinery gas is consumed as fuel by Refinery in the course of its refinery operations. The chemical processes that transpire at Refinery require heat input; the refinery gas supplies that need.
- 6) The oil refining process generates more refinery gas than Refinery can consume. Excess refinery gas must be flared into the atmosphere. However, environmental regulations restrict the quantity of refinery gas that can be disposed of in this manner. Noncompliant refineries face substantial regulatory fines. Therefore, due to the prohibitively high cost of alternative methods of disposal, it is generally

necessary to limit the production of salable petroleum products in order to control emissions produced from the flaring of excess refinery gas.

- 7) By burning this fuel in its process units, Refinery (a) eliminates restrictions on production due to the prohibitively high cost of disposing of refinery gas in conformance with environmental protection standards and (b) reduces its purchases of the alternative fuel sources (e.g., natural gas) normally used to generate the heat necessary for the refining processes.
- 8) Refinery gas is produced by various refinery sources (e.g., distillation units, catalytic processes, flare gas recovery, etc.) and must be partially desulfurized before it is sent to the fuel gas distribution system where it is routed to individual refinery furnaces and boilers. At the refinery furnaces and boilers, refinery gas is burned to produce heat for refinery processing or steam production.
- 9) Company produces 1,500,000 MMBTU of refinery gas each month. Company consumes approximately 1,300,000 MMBTU.
- 10) Company sells approximately 4,000 MMBTU of excess refinery gas each month to the AAA and BBB. Company purchases approximately 80,000 MMBTU of refinery gas each month from AAA. These transactions are discussed in further detail below.
- 11) BBB is a wholly owned subsidiary of the CCC. CCC is also a joint venture partner in AAA. Company is not related to CCC or BBB, although Company holds a minority interest in AAA. Company is a wholly owned subsidiary of PDVSA ('Parent').
- 12) AAA, owns and operates a coker unit located within Refinery. BBB owns and operates a calcining plant, located on property directly adjacent to Refinery. Refinery, AAA, BBB were originally operated as separate divisions within a single integrated refinery, constructed under the common ownership of CCC. These integrated operations continue today under the ownership of Company, AAA, and BBB as separate legal entities, and are described as follows:

As a by-product of the petroleum refining process, Refinery produces a residual feedstock that is sent to AAA's coker unit for further distillation into a product known as green needle coke. Various liquid products are also generated as by-products of the distillation process and sent back to the Refinery for further processing into salable petroleum products. Refinery gas is also generated in the course of this process. From the coker unit, green needle coke is sent to BBB's calcining plant where it undergoes a combustion reaction, resulting in a final product known as needle coke. Needle coke is a high quality petroleum product used to make graphite electrodes for the production of steel in electric arc furnaces.

- 13) As a single integrated refinery, the Refinery, AAA and BBB facilities were designed with dependent infrastructures, including shared pipelines and sewage systems, to facilitate the exchange of fuels, water, steam, and compressed air

used in the course of the refinery process. Due to the design of the facilities, it is not economically or logistically feasible to obtain these items (fuels, water, steam, and compressed air) from third-party suppliers on a long-term basis, if at all.

- 14) Under the common ownership of CCC, Refinery, AAA and BBB operated as separate divisions within a single integrated refinery. Refinery gas, water, decant oil, flushing oil, hydrogen, monoethanolamine, naptha, slop oil, steam, compressed air, kerosene and gasoil were exchanged between Refinery, AAA and BBB pursuant to an intracompany Supply Agreement. These interdivisional transactions included small quantities of refinery gas regularly transferred from AAA to Refinery and BBB and less frequent exchanges of refinery gas from Refinery to AAA for use in start-up production.
- 15) In 1989, CCC contributed Refinery (assets) and a 50% interest in AAA to DDD, pursuant to a joint venture agreement with Parent. CCC and Parent each held a 50% interest in DDD. DDD assumed Refinery and AAA's obligations under the Supply Agreement as a condition of the DDD partnership agreement. As such, the Supply Agreement established arm's length pricing for intercompany sales between facilities held by separate entities.
- 16) In 1997, CCC announced plans to withdraw from the refinery business. Parent contributed its interest in DDD to Company. DDD then distributed Refinery and a 25% interest in AAA to Company in complete liquidation of its interest in DDD. Company assumed Refinery's obligations under the Supply Agreement as a condition of the DDD partnership interest retirement agreement.
- 17) Pricing under the Supply Agreement is periodically subject to renegotiation. Due to the interdependent operations of Refinery, AAA and BBB, prices remain generally at or near cost to the extent that cost can be determined; however, pricing for any given item may be negotiated in consideration of (1) the unique interdependency of Refinery, AAA and BBB, (2) the aggregate bundle of goods purchased under the Supply Agreement (*i.e.*, refinery gas, water, decant oil, flushing oil, hydrogen, monoethanolamine, naptha, slop oil, steam, compressed air, Kerosene and gasoil), and (3) reciprocal purchasing under the Supply Agreement. 'At cost,' as it pertains to refinery gas, means the cost of desulphurizing and transporting the gas to the purchaser's facility, less the attributed value of eliminating restrictions on production faced by the seller due to the prohibitively high cost of disposing of refinery gas in conformance with environmental protection standards.
- 18) Company makes no other sales or purchases of refinery gas as consumed by Refinery in the course of its refinery operations. Company has no knowledge of comparable open market sales or purchases of refinery gas or similar property in Illinois.
- 19) The refinery gas consumed by Refinery, and sold to AAA and BBB, cannot be sold to, or used by, additional third parties without further processing.
- 20) Approximately 160,000 MMBTU of Company's excess refinery gas is used each month in the production of a salable product referred to as processed refinery gas. Unlike the refinery gas produced and consumed by Refinery, processed

refinery gas is suitable for commercial use due to its altered chemical composition, which is described below. Refinery sells this processed refinery gas to the EEE, an unrelated third party, for blending into their natural gas system.

- 21) The following processing is required to produce processed refinery gas suitable for sale to EEE:
 - a) Hydrogen sulfide content must be further reduced from 60 parts per million to 4 parts per million. Hydrogen sulfide is corrosive and poisonous. Although refinery gas must be partially desulphurized for use in refinery furnaces and boilers, processed refinery gas requires lower hydrogen sulfide levels in order to prevent pipeline corrosion and meet the odor threshold for natural gas specifications. Hydrogen sulfide is removed by caustic absorption.
 - b) Water content must be reduced to 7 pounds per million standard cubic feet. The reduced water content prevents condensation and corrosion during pipeline transport.
 - c) Refinery gas must be compressed to sufficient pressure (900 lbs. per square inch) to enter EEE' natural gas pipeline.
- 22) A dedicated gas processing plant is required for the processing outlined above. The plant is used exclusively for the production of processed refinery gas for sale to EEE. The plant includes the following equipment:
 - a) A circulating caustic system used to remove sulfur in the form of hydrogen sulfide;
 - b) Dehydration equipment, required to remove water that would condense and either freeze or cause corrosion in the pipeline;
 - c) Multiple compressor trains, required to raise gas pressure to the level needed to enter EEE' natural gas pipeline;
 - d) Online gas chromatography equipment, which monitors the molecular composition of the gas; and
 - e) A distributed control system, which controls the equipment described above.
- 23) Annual full average cost of the dedicated processing plant is \$800,000 per year, which includes equipment maintenance, replacement costs and allocated overhead. Of this cost approximately \$500,000 is fixed, with the remaining variable cost at \$0.18 per thousand standard cubic feet of refinery gas. Replacement cost for this equipment is about \$20,000,000.
- 24) Company transports the processed refinery gas sold to EEE by utilizing a dedicated pipeline existing between the facilities, which is owned and operated by EEE. The pipeline was built in 1970 to transport naphtha, but is no longer suited or required for that purpose. The estimated cost to build a similar pipeline would be approximately \$1 million dollars per mile.

- 25) The sale of processed refinery gas is mutually beneficial in that it provides EEE with a continuous supply of processed refinery gas, while eliminating restrictions on production faced by Company due to the prohibitively high cost of disposing of excess refinery gas. EEE has agreed to accept daily volumes up to 50% of the estimated 'normal' level of production and to use reasonable efforts to accept volumes up to the indicated 'peak' level. Historically, the amount of processed refinery gas sold to EEE each month accounts for 100% of Refinery's excess supply of refinery gas, which would not otherwise be sold to AAA or BBB or consumed by Refinery.
- 26) The sales price of the processed refinery gas sold to EEE is a function of the following: (1) the market value of natural gas (processed gas is suitable for blending into EEE's natural gas system, which is marketed to third parties, and as such provides a near economic substitute for natural gas), (2) the attributed value of processing the gas in the manner described above, (3) fixed and variable costs incurred by Company to acquire, operate and maintain the dedicated gas processing plant, (4) pipeline transportation costs, and (5) the attributed value of eliminating restrictions on production faced by Company by accepting 'peak' levels of processed gas.

Ruling Requested

Under the facts as presented, it has been established that there is no market for refinery gas. Thus, refinery gas produced as a by-product of Company's business operations at its Refinery has no fair market value. Therefore, because the refinery gas has no fair market value, Company's use of the refinery gas in its business operations at Refinery is not subject to use tax imposed under 35 ILCS 105/3-10 ('Act').

Relevant Authorities

35 ILCS 105/3-10:

Unless otherwise provided in this Section, the tax imposed by this Act is at the rate of 6.25% of either the selling price or the fair market value, if any, of the tangible personal property. In all cases where property functionally used or consumed is the same as the property that was purchased at retail, then the tax is imposed on the selling price of the property. In all cases where property functionally used or consumed is a by-product or waste product that has been refined, manufactured, or produced from property purchased at retail, then the tax is imposed on the lower of the fair market value, if any, of the specific property so used in this State or on the selling price of the property purchased at retail. For purposes of this Section, 'fair market value' means the price at which property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell and both having reasonable knowledge of the relevant facts. The fair market value shall be established by Illinois sales by the taxpayer of the same property as that functionally used or consumed, or if there are no such sales by the taxpayer, then comparable sales or purchases of property of like kind and character in Illinois.. ...

Illinois Administrative Hearing Decision, ST 98-6, January 1, 1998:

Obviously, as the evidence is conclusive that there is no market for refinery fuel gas, and there was no market during the taxable period, there are no other sales which can be used to determine fair market value. The one sale that was looked at (i.e. the transaction at issue) was not a typical sale involving a willing buyer under no compulsion to purchase the refinery fuel gas. Rather, the purchaser's peculiar need for the chemical plant offered for sale by TAXPAYER necessitated that it agree to also purchase the refinery fuel gas. Otherwise, there would have been no sale of the chemical plant. Certainly, fair market value cannot be determined from this transaction.

Discussion

The Act imposes a tax at the rate of 6.25% measured by either the selling price or the fair market value of the property used or consumed in the state. In those instances where the property is either a by-product or waste product refined from property purchased at retail, the tax is imposed on the lesser of the fair market value of the property or the selling price of the property purchased at retail. 35 ILCS 105/3-10. Refinery gas is a by-product of the refining process. Thus, the measure of the use tax imposed on refinery gas would be the lower of the fair market value of the refinery gas or the selling price of crude oil; *i.e.*, the product purchased at retail.

The term 'fair market value' is defined as:

...the price at which property would change hands between a willing buyer and a willing seller neither being under any compulsion to buy or sell and both having knowledge of relevant facts. The fair market value shall be established by Illinois sales by the taxpayer of the same property as that functionally used or consumed, or if there are no such sales by the taxpayer, then comparable sales or purchases of property of like kind and character in Illinois....

Pursuant to the above quoted statutory section, the fair market value of refinery gas consumed by Company would be established by Company's sales of the refinery gas. However, Company's sales of excess refinery gas are made under the terms of an intercompany Supply Agreement between Company/Refinery, AAA and BBB. These sales between parties operating within a single integrated refinery are not typical sales between a willing buyer and a willing seller and, as such, do not represent the fair market value of the refinery gas. Alternatively, if there are no open market sales by Company, then fair market value would be established by comparable sales or purchases of property of like kind and character in Illinois. However, there are no comparable transactions capable of evidencing the value of the refinery gas.

The Director of Revenue in Administrative Hearing Decision, ST 98-6, addressed this very issue and concluded that a taxpayer's sale of refinery gas to the purchaser of a chemical plant situated within the taxpayer's refinery was not evidence of the fair market value of the refinery gas. The purchase of refinery gas was a necessary part of a larger asset purchase agreement between the parties and, thus, was not a 'sale' between a willing buyer and a willing seller for purposes of the Act.

Similarly, the Supply Agreement between Company/Refinery, AAA and BBB, like the fuel agreement at issue in Administrative Hearing Decision, ST 98-6, was a necessary component of a larger asset purchase agreement involving facilities with shared pipelines and dependent infrastructure. DDD initially assumed Refinery's obligations under the Supply Agreement as a condition of the DDD partnership agreement. Subsequently, Company assumed Refinery's obligations under the Supply Agreement as a condition of the DDD partnership interest retirement agreement. The Supply Agreement is also a key component of the operation of Refinery, AAA and BBB. Because of their integrated construction and operations, Refinery, AAA and BBB are uniquely dependent on each other for refinery gas, in addition to other fuels, water and compressed air. It is neither economically nor logistically feasible to obtain these items from third-party suppliers. Thus, the intercompany transactions under the Supply Agreement are not 'typical sales' involving a 'willing buyer and a willing seller' under no compulsion within the meaning of the Act. See Admin. Hearing Decision, ST 98-6.

Accordingly, the price at which refinery gas is sold under the Supply Agreement is not the price at which refinery gas would be purchased or sold under open market conditions, but accounts for the peculiar necessities and requirements of the parties. Pricing under the Supply Agreement is generally at or near cost, to the extent that cost can be determined; however, the price of any given item, including refinery gas, may be negotiated in consideration of: (1) the unique interdependency of Refinery, AAA and BBB, (2) the aggregate bundle of goods purchased under the Supply Agreement (*i.e.*, refinery gas, water, decant oil, flushing oil, hydrogen, monoethanolamine, naphtha, slop oil, steam, compressed air, Kerosene and gasoil), and (3) reciprocal purchasing under the Supply Agreement. Therefore, these sales are not governed by the open market considerations necessary to set fair market value under the Act. See Admin. Hearing Decision, ST 98-6.

There are few, if any, Illinois sales of refinery gas and even fewer, exchanges of refinery gas 'between a willing buyer and a willing seller, neither being under any compulsion to buy or sell and both having reasonable knowledge of the relevant facts.' Thus, refinery gas has no market value. Company has no knowledge of comparable Illinois sales or purchases of refinery gas or similar property, other than sales and purchases of refinery gas made under the Supply Agreement, which are not capable of evidencing the value of refinery gas for purposes of the Act. Indeed, the Illinois courts have agreed that given the absence of such a market, refinery gas, like catalytic coke, has no market value. See *Clark Oil & Refining Corp. v. Johnson*, 154 Ill. App. 3d 773 (Ill. App. Ct. 1987). Specifically, the Illinois Supreme Court stated:

Three products of the refinery process are used by Mobil in the refinery, are not resold in any form... Two of them, catalytic coke and process gas, are waste products which have no market value. *Mobil Oil Corp. v. Johnson*, 442 NE2d 846 (Ill. 1982).

The Director also recognized that refinery gas has no market value:

...in order to determine a fair market value, there must be a market for the property. There is an abundance of evidence that there is no market for refinery fuel gas for many reasons relating to its intrinsic qualities... Admin. Hearing Decision, ST 98-6.

In addition, refinery gas has no economic substitute by which to provide a measure of market value based on 'comparable sales or purchases of property of like kind and character.' The fact natural gas might provide a functional substitute for refinery gas does not mean that refinery gas can be used in place of natural gas or that the two items are economic equivalents. Marketability, and not use, determines market value. For example, gold may be used in place of copper as a conductor of electricity; however, it would be flawed to assume that gold and copper are equivalent in market value based on the availability of gold as a functional substitute. 'Property of like kind and character' need not be identical; however, given that the legislative purpose of the statute is to provide a rational measure of market value, and not to impose an arbitrary tax base, it logically follows that 'like property' would preclude items having substantially divergent economic values. As such, it is implausible that natural gas, for which there is clearly a sizeable market, should provide a fair market value for refinery gas, an inferior product for which there is no market.

Likewise, Company's sale of processed refinery gas to EEE does not provide a comparable sale by which to measure the fair market value of refinery gas. Unlike refinery gas, processed refinery gas is a salable product suitable for blending into People's natural gas system. Because refinery gas has no market value, and its sale eliminates restrictions on production faced by Company due to the prohibitively high cost of disposing of refinery gas, the consideration paid for the processed refinery gas is not attributable to the value of refinery gas as a raw material. Instead, the sales price of the processed refinery gas sold to EEE is a function of the following: (1) the market value of natural gas (processed gas is suitable for blending into EEE's natural gas system, which is marketed to third parties, and as such provides a near economic substitute for natural gas), (2) the attributed value of processing the gas in a manner suitable for use by EEE, (3) fixed and variable costs incurred by Company to acquire, operate and maintain the dedicated gas processing plant, (4) pipeline transportation costs, and (5) the attributed value of eliminating restrictions on production faced by Company by accepting 'peak' levels of processed gas. As such, the transaction is not economically equivalent to an open market sale of the refinery gas produced and consumed by Refinery and, therefore, does not establish a comparable market value for purposes of the Act.

Conclusion

For the foregoing reasons, Company submits that refinery gas has no fair market value. The sales and purchases under the Supply Agreement are not open market transactions capable of evidencing the value of refinery gas under the Act. Pursuant to the terms of the Act, use tax is imposed on the lesser of the fair market value of the by-product or the sales price of the property purchased at retail. 35 ILCS 105/3-10. There are no open market sales or purchases of refinery gas or similar property in Illinois capable of evidencing the fair market value of refinery gas for Illinois use tax purposes. Accordingly, the fair market value of the refinery gas is less than the selling price of crude oil. Therefore, Company is not liable for Illinois use tax with respect to its consumption of refinery gas produced as a by-product in the course of its refinery operations.

In the event that the Department cannot provide a favorable ruling based on the facts and authorities stated herein, Company requests a conference to discuss these issues in person before a final ruling is issued. If you have any questions, please call me.

We are unable to provide the specific ruling you have requested. This is because such a ruling would require us to make a factual finding that there is no market for refinery gas and therefore the refinery gas produced as a by-product of Company's business operations at its Refinery has no fair market value. While the Department issues Private Letter Rulings in response to specific taxpayer inquiries concerning the application of a tax statute or rule to a particular fact situation (see 2 Ill. Adm. Code 1200.110(a)), Legal Services is not in a position to rule on the issues of fact presented in this request. Factual determinations such as those requested herein are better made through the Audit process. Therefore, we regret that the only ruling we are able to issue is one that agrees with your legal analysis but is binding only so long as your factual assertions can be supported.

Section 3-10 provides that "[u]nless otherwise provided in this Section, the tax imposed by this Act is at the rate of 6.25% of either the selling price or the fair market value, if any, of the tangible personal property. In all cases where property functionally used or consumed is the same as the property that was purchased at retail, then the tax is imposed on the selling price of the property. In all cases where property functionally used or consumed is a by-product or waste product that has been refined, manufactured, or produced from property purchased at retail, then the tax is imposed on the lower of the fair market value, if any, of the specific property so used in this State or on the selling price of the property purchased at retail. For purposes of this Section 'fair market value' means the price at which property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell and both having reasonable knowledge of the relevant facts. The fair market value shall be established by Illinois sales by the taxpayer of the same property as that functionally used or consumed, or if there are no such sales by the taxpayer, then comparable sales or purchases of property of like kind and character in Illinois."

It is our understanding that the refinery gas that is a by-product of Company's business operations and the processed refinery gas that Company sells to EEE are not the same, and therefore sales of the processed refinery gas cannot be used as a measure of fair market value for the refinery gas. We also understand that the sales of refinery gas under the Supply Agreement cannot be used as a measure of the fair market value of refinery gas. This is due, in part, to the fact that the sales of refinery gas between the parties (similar to the sales described in Hearing Decision ST 98-6) were agreed to as a condition of a larger asset purchase agreement. As a result, the sales were not sales made between a "willing buyer" and a "willing seller" as prescribed by the statute.

Based upon the provisions of Section 3-10, and in consideration of the facts asserted and review of Administrative Hearing Decision ST 98-6, we agree that if the refinery gas in issue has no fair market value, then the use of refinery gas by Company in its business operations at Company's Refinery is not subject to Use Tax imposed under 35 ILCS 105/3-10.

I hope this information is helpful. The Department of Revenue maintains a Web site, which can be accessed at www.revenue.state.il.us. If you have further questions related to the Illinois sales tax laws, please contact the Department's Taxpayer Information Division at (217) 782-3336.

Very truly yours,

Martha P. Mote
Associate Counsel

MPM:msk
Enc.